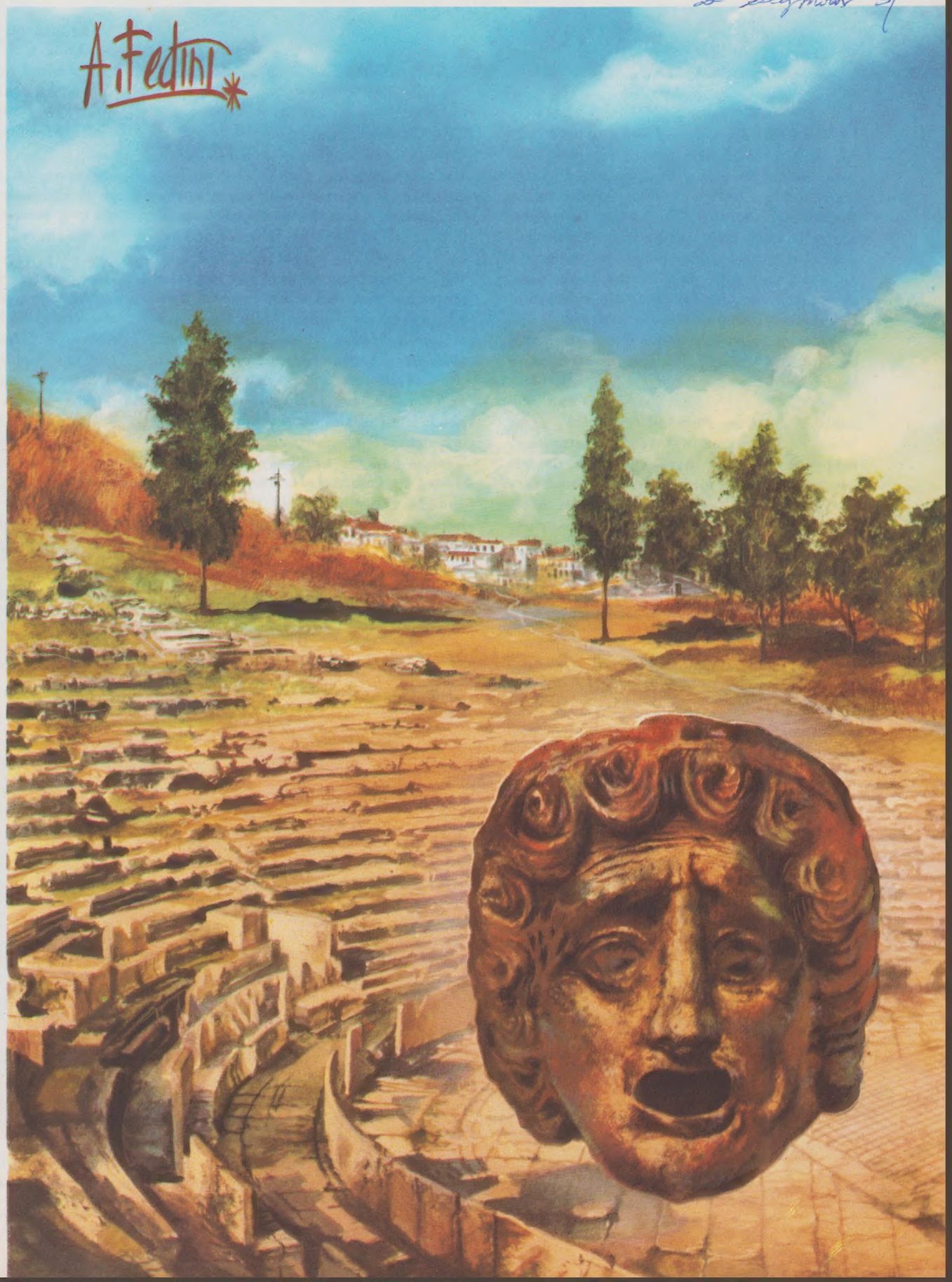
KNOWLEDGE

NO. 134 VOLUME 12 The colour magazine which grows into an encyclopaedia EVERY MONDAY 2/-



Advisory Editorial Board *Lady Violet Bonham Carter, D.B.E., Prof. C. N. L. Brooke, M.A., Mr. Norman Fisher, M.A., Mr. Walter Hamilton, M.A., Mr. John Sparrow, M.A., Dr. Dudley Stamp, C.B.E., D.Sc., Sir George Thomson, F.R.S., D.Sc.*

Editor-in-chief: *John Chancellor, M.A.*

Editor: *William Armstrong, B.A.; Assistant Editor: Christopher Falkus, B.A.*

THEATRE (part one)

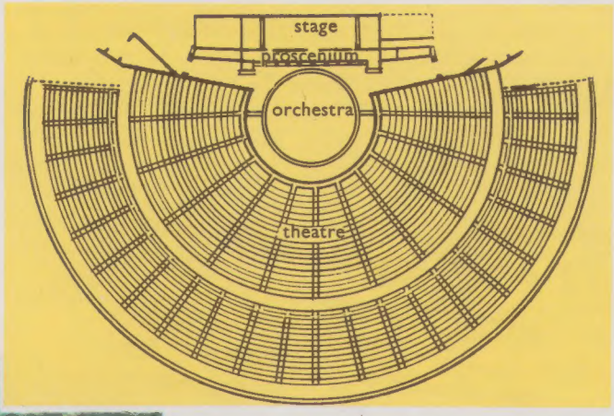
THEATRES are closing down all over England. Live theatre has to compete both with the cinema and with television. But this is not the first crisis in the long history of the theatre and it has faced in the past far greater obstacles than mere competition. Plato considered it dangerous for people to pretend to be what they were not; in the Dark Ages, those first centuries following the collapse of the Roman Empire, many considered drama to be immoral; while under the puritan rule of Oliver Cromwell English theatres were burned and actors imprisoned.

Yet the theatre has survived and will continue to do so. Some of the world's finest literary works are plays. Despite their eclipse in the Dark Ages, the dramatic arts came into their own in the 15th-century Renaissance. The urge to improve on man's achievements in the fields of painting, sculpture and writing, which was an important part of the Renaissance, was one of the most significant movements in history. It made possible a literary climate which produced men like Shakespeare, Marlowe, Kyd, and Jonson. After centuries of little achievement, the arts, including the theatre, were reborn and with them the attitude of the Greeks towards the theatre. Indeed the basic ideas of the present theatre originated from those of classical times.

Tragedies are still performed in the Syracuse theatre, built in the 5th century B C when Sicily was a Greek colony

The Greek theatre

'Drama' was originally a Greek word meaning 'a thing done'. The earliest dramatic productions took place in the 6th century B C in the small city state of Attica, where plays probably developed by accident. The people of Attica worshipped Dionysus, the wine god; after the grapes had been picked and crushed, they would dress up in animal skins and dance around his altar. It seems likely that their ritual became more elaborate, and the worshippers split into two groups or choruses, one asking the questions about the god and his teaching, and the other chanting the answers. A man called Thespis had the brilliant idea of introducing an actor to play the part of the god. In this simple way the play was born, and Dionysus became the god of tragedy.



Plan of the Greek theatre at Epidaurus, 4th century B C. It could seat 16,000

The idea quickly spread to the other Greek states, and although nobody knows when the first theatre was built, by the 5th century B C many cities had them. They were not like our theatres, with a permanent repertoire of plays; in fact they were only used on important occasions. An Athenian citizen did not go to the theatre to enjoy himself, and the theatres were not run for profit – they were financed by the wealthy citizens, and they were attended in much the same spirit as we would go to church.

The plays were performed at one of the two great dramatic festivals of the Athenian calendar: the City Dionysia, and the Lenaea.

Crowds would come from all over Greece for the festival. There were no separate 'matinées' or 'evening' performances; the performance lasted all day and the audience had to bring enough food to last the day through. The plays were of a high standard and were carefully rehearsed long before they were staged. Professional actors were paid by the state and might be allotted to a playwright or producer.

The theatre building. The warm sunny climate of Greece meant that the theatre did not need a roof. The most important part of the Greek theatre was the *orchestra*: this was a large circular space where a chorus of 12 to 15 actors danced and chanted their lines. In the centre stood a statue of Dionysus, the god of tragedy. The audience watched from a hillside and looked down onto the orchestra, and the stage which was raised above the orchestra, and joined to it by a flight of steps. The Greeks chose their sites very carefully so that the sound would carry to the topmost tier of stone seats, ranged on the hillside. The actors changed their costumes in a stone hut or tent. *Skene* is the Greek word for a tent from which we get our 'scene'. One of the stone walls might act as a permanent 'back cloth' for the stage. Sometimes it was decorated with painted columns, and the roof was often used to suggest Olympus, the home of the Greek gods.

The actor. In Greece acting was considered a very honourable profession, and sometimes dramatists acted in their own plays.

Previous page: The remains of the theatre of Dionysus by the Acropolis at Athens, 4th century B C. On the right: Greek tragic mask.

KNOWLEDGE NEWS
Week beginning 28th July 1963

K K K

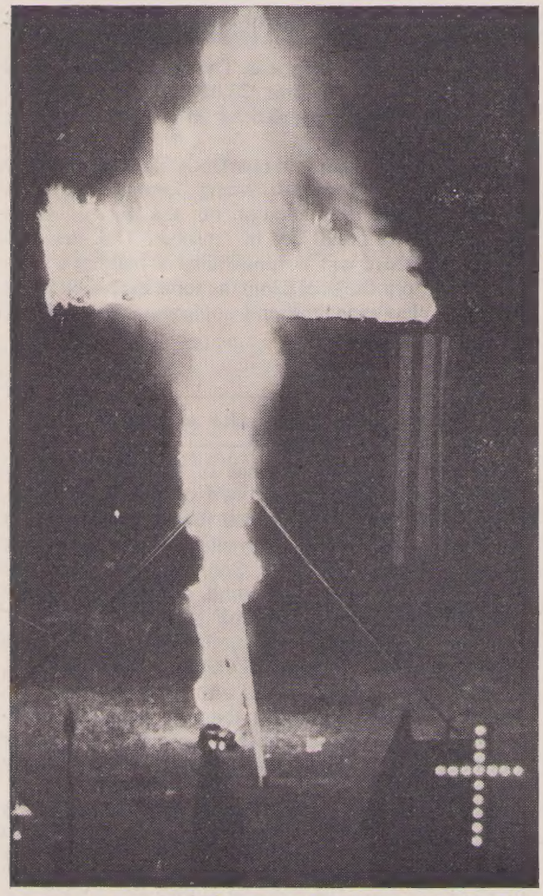
In the Deep South the fiery crosses are burning again. In the fields of Alabama, Georgia, and other Southern states ghostly figures in white robes and hoods gather around the flames. In flat Southern accents voices shout: 'The Bible proves that the nigger is inferior to us white Anglo-Saxons.'

THE Deep South is an extraordinary place where out-of-date ideas are still fanatically held. About 100 years ago these Southern states were fighting the rest of the United States to keep their right to have slaves. Now many of these states are doing their utmost to keep segregation: the separation of white from coloured people in such a way that coloured people become second-class citizens.

Attempts to keep coloured people out of schools and universities; different sections of public transport for white and coloured; shops and restaurants which are barred to coloured people; all these are still practised, and were, until quite recently, an accepted part of the Deep South. Of course by no means all the people in the South support segregation. But many do, and among the most extreme are the Ku Klux Klan.

Since 1954, when the Supreme Court of the United States ordered desegregation in Southern schools, there has been a revival in the Klan's activities. The fiery crosses have been burnt, although in most Southern states this is illegal; and although wearing masks in public places is also illegal, Klansmen in full robes have paraded through Southern towns.

How serious is this? On the one hand there are today only 70,000 members of the Klan. On the other hand, the Ku Klux Klan is capable of doing a lot of damage – like bombing negro leaders' homes and carrying out the occasional murder. Because of these outrages the Klan must be taken seriously – despite its extraordinary ceremonials, its firmly held doctrine that 'God is a segregationist', and that the fluoridisation of water supplies is a Communist plot to poison Americans.



The fiery crosses of the Klan are again lighting up the night skies of some Southern states

The Invisible Empire

However, about 50 years ago the Klan had real power. 'The Invisible Empire', as it was called, influenced the election of state governors, and its members marched triumphantly through the streets of Washington in full regalia.

The Klan first came into existence in Tennessee soon after the American Civil War. It consisted of white men banded together to protect themselves against the danger of the newly privileged negroes.

At one stage its membership numbered millions, and it existed in most of the United States. Today it consists almost entirely of poor white people, and is mainly confined to Alabama, Georgia, South Carolina, and the north of Florida.

The Imperial Wizard and Co.

The Klan's members claim that they originated in the Scottish clans. The head is the 'Imperial Wizard'. Beneath him in rank is the 'Exalted Cyclops', who runs a Klavern, or local group. Beneath the Cyclops is the Kludd (chaplain), and beneath him the Klavalier (the ordinary soldier). Recruits have to take a blood oath at night; at this ceremony they pay their Klectokon or initiation fee. Women and children also have their own branches of the Klan.

In fact the whole thing might be summed up as a lot of 'klap-trap'.

Waiting for the Wizard – a Klavern of Klansmen wait for the arrival of their chief, the Imperial Wizard

A mounted Klavalier – the picture (above) was taken when the Klan had millions of members and was very influential

(Below) A recent picture of a Klavalier – now there are only 70,000 Klan members

MEN AGAINST A MOUNTAIN

'Because it's there.' What better reason for climbing a mountain? But Everest had been *there*, in the minds of the world's mountaineers, a long time before it was climbed. Ten years ago, two brave men conquered it. Behind this conquest is a story of triumph and tragedy which is one of the most stirring of our times.

The conquerors of Everest – the Sherpa 'Tiger' Tensing (left) and Sir Edmund Hillary (right)

Letter from the Editor-in-Chief

37 HERTFORD ST.
LONDON W.1

WE have nearly finished judging the *Knowledge* Historical Newspaper Competition. Unfortunately we have been longer than we had intended in getting the results out. The reason for this is that we received a great many last-minute entries from Australia and New Zealand.

We realise that the temptation is, when entering any *Knowledge* competition, to get your entries in just before the closing date – but it would make it much easier for us if you could try and get them in a little earlier.

Another Joke Competition

Our last Joke Competition was a tremendous success, so here is another. Send us your favourite joke. There will be prizes for the ones which are considered funniest by a panel of the 'Knowledge' staff. The competition is divided into two separate parts: one for British and Irish readers, and one for overseas readers. There will be, in both competitions, five prizes of 30s, and the writers of any jokes which are published thereafter will receive 5s.

The competition closes for British and Irish readers on Monday, August 12th, and for overseas readers on Friday, November 15th, 1963.

The winning entries will be illustrated by the 'Knowledge' artist. Send your entries as soon as possible to:

'Knowledge Joke Competition',
37 Hertford Street,
London W.1.

John Chancellor

TEN years ago Edmund Hillary and the Sherpa Tensing stood triumphant on the summit of Mount Everest.

It was a wonderful moment for Britain, for the news reached London on Coronation Day. Everest had been climbed at last, after years of failure and tragedy.

People had said time and time again that no one would ever conquer the 29,002-foot peak – the highest in the world. To understand just how gigantic the feat of the 1953 expedition was, let us look back at the history of Everest.

Peak 15

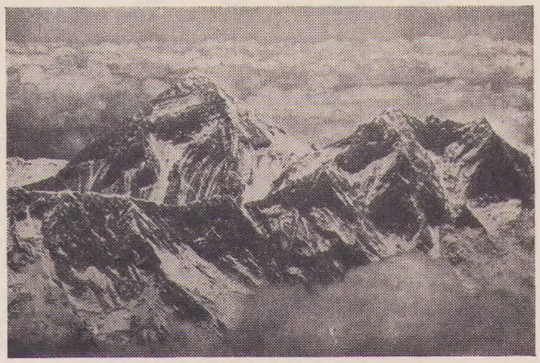
Everest was discovered in 1852 during the Great Trigonometrical Survey of the Himalayan range. Before it was found to be the world's highest peak it was simply known as Peak 15. It was christened 'Mount Everest' by Sir Andrew Waugh, Surveyor-General of the survey, after his predecessor, Sir George Everest, who was a distinguished mathematician.

As early as 1893 attempts were made to get permission to climb Everest from Tibet, but all requests were turned down by the ruler of Tibet, the Dalai Lama.

It was not until 1921 that the Tibetan Government granted permission for a British expedition to travel to Everest. This reversal of policy was largely due to Sir Charles Bell, an officer in the Indian political service, who had been to the holy city of Lhasa, the capital of Tibet, and become a personal friend of the Dalai Lama.

As soon as the news reached England the Mount Everest Committee was formed by the Geographical Society and the Alpine Club.

Hillary and Tensing near to the summit of Everest



Mount Everest – a challenge that got a heroic response

In those days very little was known of the special problems that a climber would have to face on a mountain like Everest. Before 1921 the highest point that had ever been reached on a mountain was 24,600 feet. At this height climbing is an exhausting business; the body is deprived of its vitality by the effect of the thin air.

Anyway, the 1921 expedition assembled at Darjeeling in May, and its chief object was to find a way to the foot of the mountain to see if there was a route by which it could be climbed. The expedition was a success, and the groundwork had been laid for the first real attempt on the summit.

This came the following year. The expedition managed to reach a height of over 25,000 feet – but shortly afterwards a sudden avalanche killed seven Sherpa porters.

The expedition that set out from England in 1924 was confident of success. Many lessons had been learned from the 1922 attempt, not the least of which was that Everest could not be 'rushed'. The members realised that there was no possibility of making a dash for the top from the final camp, as some earlier climbers had hoped. The expedition did not know when it set off that more tragedy lay ahead.

Tragedy near the summit

The tragedy was to be that of George H. Leigh-Mallory and Andrew Irvine, two of the finest mountaineers who ever lived. On their final attempt to climb Everest they were last seen very close to the summit. But they were never seen again. Some people think they may even have reached the summit, and died on the way down. But the mystery has never been cleared up.

The next attempt on the mountain was not made until 1933, but that again failed. Other attempts followed, and then the war put a stop to any further efforts.

It was not until June 1951 that the Nepal Government gave permission for another expedition. A member of this expedition was a New Zealander called Edmund Hillary.

And it was he, along with Tensing, who eventually stood on the summit of Everest. What a feeling it must have been for both men. As they stood there with the wind whipping at them, they shook hands. They had climbed higher than anyone before them. The world lay at their feet. Everest was conquered.

The mammoth was hunted by Palaeolithic man, and he may have helped to bring about its extinction

FORERUNNERS OF MODERN MAMMALS

IN northern Siberia, in places where rivers erode the frozen soil, great tusks of ivory are occasionally found. They are rather like elephants' tusks but curved and very long, sometimes over 10 feet from base to tip. At one time there was a regular trade in these tusks, for the ivory was valued for the same reasons as that of modern elephants. In Alaska gold miners sometimes find quantities of coarse hair in the gravel they are working, and some of the cave drawings of Palaeolithic man, dating from the Ice Age, depict a sort of elephant with curved tusks and covered with a coat of long hair.

All these are signs of the former existence of the beast we call the mammoth. It was a kind of elephant, adapted for life in the very cold climate of the Ice Age or Pleistocene period, which came to an end about 10,000 years ago. The mammoth of Europe and Asia was about the size of an Indian elephant and was covered by a thick coat of wool and hair, so long that it almost reached the ground. It was hunted by the men of the Old Stone Age (Palaeolithic), and they probably played a part in its final extinction.

History of the mammals

On page 1393 we gave an account of the early mammals, from the beginning of the Cenozoic era, about 70 million years ago, to the Miocene period which ended 15 million years ago. In this article we shall describe the mammals of the Pliocene and Pleistocene periods; the former lasted about 14 million years and the latter lasted from about a million to 10,000 years ago and so preceded the recent or Holocene period.

By the beginning of the Pliocene the great mammals had started to decline, but even so many more of them existed than do today. For example, there were many different kinds of elephants instead of only two, as there are now. Those mammals that lived through the Pliocene and into the Pleistocene (which is equivalent to the Ice Age) were mostly similar to modern mammals. Many of the mammals which became extinct were larger than their present-day representatives; examples of this are the great sloths, the cave bear, and some of the extinct elephants.

MAMMOTHS

We know far more about mammoths than about most extinct animals. This is because, in addition to fossil bones, entire carcasses, with flesh, skin, and hair preserved, have been found in the permanently frozen soil of north-eastern Siberia. Even the stomach contents are preserved, so that we know what plants they ate. The mammoth (*Mammuthus primigenius*) is the only kind of elephant to have become adapted to a cold climate. It was rather smaller than the living African elephant, but an allied American species, *Mammuthus imperator*, stood 14 feet tall at the shoulder.

Skeleton of a mammoth compared with a boy

The forests and plains of the Pliocene and Pleistocene periods were inhabited by a variety of great mammals,

WHY THEY BECAME EXTINCT

We really do not know much about the causes which have brought about the extinction of animals in the past. Most of the large mammals shown on this page died out during the Pleistocene period, which began about one million years ago. During this time the climate of the temperate regions alternated between warm and very cold. The great ice-sheets advanced and retreated four times, and it was probably these rigorous conditions that caused many of the great mammals to die out. The human hunters of the Stone Age may have helped to exterminate some of them.

① and ②. These two animals are forerunners of the present-day horses. The first, *Pliohippus*, was a kind of small horse that lived in the Pliocene period. The second, *Equus*, lived in the Ice Age and is the ancestor of all domesticated horses. It still lives wild in small numbers in Mongolia and is called Przwalski's horse. Wild horses were hunted by Stone Age man long before they were domesticated.

③ and ④ are extinct bears. The first is one of the short-faced bears (*Arctotherium*) of North America. The other is the cave bear, *Ursus spelaeus*, the largest known mammal of the order Carnivora; it lived during the Ice Age and probably competed with early man for possession of caves to live in; imagine fighting such a beast with weapons made of stone and wood!

⑤ and ⑥ are the mastodon and mammoth, which were elephants of the Ice Age or Pleistocene period; both of them probably died out soon after the end of it. We have already described the mammoth. There were various kinds of mastodon; some of them had four tusks, a pair in the upper jaw and a pair in the lower jaw. The two-tusked mastodon that we show here lived in North America and was the last of them all to become extinct.

some of which lived together with early man. A few of the more characteristic species are shown here

⑦ is a kind of rhinoceros, called *Teleoceras*, which lived in the Pliocene period in North America. It was a short-legged, ungainly animal and did not survive into the Pleistocene.

⑧ is a large dog-like animal called *Amphicyon*.

⑨ is the great wolf of the Pleistocene. It was over 6 feet long and is named *Canis dirus* (*canis*, dog or wolf; *dirus*, terrible).

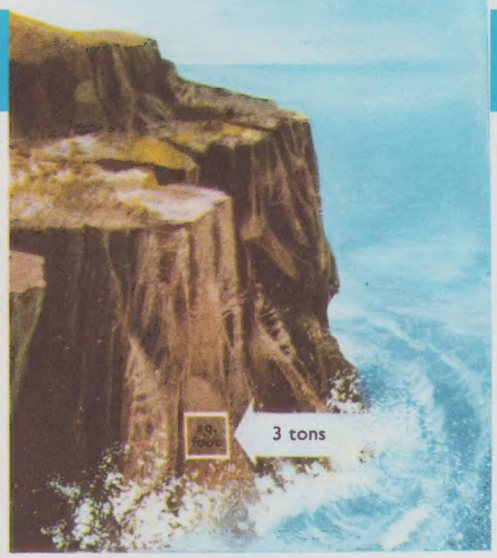
⑩ is the sabre-toothed tiger. The canine teeth of its upper jaw were very long and flattened like sword-blades, and could inflict terrible, stabbing wounds. These great cats probably preyed on the very large herbivorous mammals, as their specially developed teeth would enable them to kill beasts much bigger than themselves. They are called 'tigers', but of course we do not know whether they were striped or spotted, or without markings.

⑪ is a giant beaver. The modern beaver is about the size of a cat, but this one was as big as a small bear.

⑫ is the musk ox, an animal which lived in southern Europe during the advance of the ice in the Pleistocene period. At the end of the Ice Age it retreated northwards and is now found in Greenland and the extreme north of North America.

⑬ is the giant sloth or *Megatherium*, an extraordinary animal which lived in South America and probably survived for some time after the end of the Ice Age. It was a huge beast with the bulk of an elephant, and probably fed by rearing up and browsing on the leaves of trees. It belongs to the order of mammals called Edentata, which includes the modern sloths and anteaters. It is possible that some kinds of giant sloth were alive when man first migrated into South America.

NOTE—The illustrations are not drawn to a constant scale, and the animals did not all exist at the same time.



The pressure waves can exert on cliffs

THE EFFECT OF

THE landscape which we see around us is slowly but continuously changing. Mountains are gradually being worn down and new plains built. This changing aspect of the solid world around us is particularly noticeable around the coasts, where the sea is wearing away the land in some places and building it up in others. One of the most remarkable examples of erosion by the sea is that which has taken place along a 34-mile stretch of coast between Flamborough Head and Spurn Head, in Yorkshire. Here erosion proceeds at varying rates but may reach as much as 5 yards in a year. It is estimated that during the last thousand years the coastline has retreated over a mile, and it is known that more than 25 villages have disappeared. The Wash, on the other hand, is a good example of the extension of the land. The Romans built a wall here to protect the Fens from the sea. Since then it is estimated that over a hundred square miles have been added to the land.

Erosive action

Sea waves can exert a tremendous pressure against cliffs. The amount will depend on wave strength, which in turn depends on the force of the wind, and under exceptional conditions may reach as much as 3 tons per square foot. In 1877 a block of cement weighing 2,600 tons was moved by waves beating against the breakwater at Wick. Erosion is also accomplished by the air inside crevasses being compressed against the rock by the action of the waves. The bombardment of the base of the cliff by pebbles and other loose material carried by the attacking waves is responsible for a great deal of damage.

FORMS RESULTING FROM THE EROSION OF COASTS

The erosion of coasts has a great effect upon cliffs.

The formation of a cliff depends to a very large extent on the rate of the erosion at its foot by the sea, and of the rest of its face by the normal eroding activities of water, ice, and wind. Where the two are equally balanced, vertical cliffs are formed – for example, in the chalk cliffs of southern England. Where erosion by the sea is the more rapid, the cliff overhangs, because the waves can attack only the base of the cliff as in diagram 1 below. Sooner or later the overhanging portion of the cliff will collapse (diagram 2). At this stage a lot of loose material falls to the foot of the cliff, but this is in time broken up (diagram 3) and is usually removed by the sea so that the process starts all over again. Cliffs of loose sandy material usually slope back from the base to the top as they slump down quickly after erosion at the base. Cliffs vary not only in their profiles, but also in height. This happens when they retreat more or less uniformly so that the cliffs form a fairly straight edge, and the variations in height depend on the original shape of the hills and valleys into which the sea has cut. A fine example of this kind of coast is to be found near the Birling Gap to the west of Eastbourne in Sussex.

Frequently the sea picks out weak points in the cliffs, and these form small bays while the more resistant sections stand out as promontories. This intricate kind of coast may be found around the Lizard in Cornwall.

Perhaps the most interesting of all cliff forms are stacks and natural arches. These are normally formed in relatively horizontal rock formations, where the joints, which are points of weakness, are eroded to form deep gashes. Very often there are two sets of joints at right angles to one another, and the sea, by attacking them both simultaneously, forms an archway. In time denudation will transform an archway into stacks, which are isolated pillars of rock completely surrounded by the sea.

These two features often occur in close proximity – for example, at Black Hall Rocks, Durham.

Archway and stack, Black Hall Rocks, Durham

Sometimes dykes of igneous rocks form small walls which resist wave attack, but on other occasions they are weaker than the rocks through which they run, and form troughs. Cliffs which are formed of weak material are often scored by gullies, which have been formed by the action of rainwater on a steep slope with no protective vegetation cover.

BEACH MATERIAL

The sea both removes and creates land. The land it deposits usually involves the re-

THE SEA ON COASTS

moval of material from one beach to another farther along the coast. Much of this material is derived initially from the destruction of cliffs.

This usually results, on rocky coasts, in the formation of large angular blocks of rock. These blocks are gradually broken down by being thrown against one another by the waves, and in time these pieces of rock become the familiar rounded pebbles that we see on the seashore.

Eventually much of the rock debris, together with shells and other animal remains, become broken into minute pieces, which form the sands.

THE MOVEMENT OF BEACH MATERIAL

The fine debris of the beaches is constantly on the move. Anyone familiar with a particular beach will notice how much the sand shifts from day to day, especially after a change in wind direction. This may be clearly seen at any of the British seaside resorts, such as Brighton, where groynes have been built as a barrier against the movement (above right). The pile of pebbles, sand, or shingle is often several feet higher on one side of the groyne than on the other.

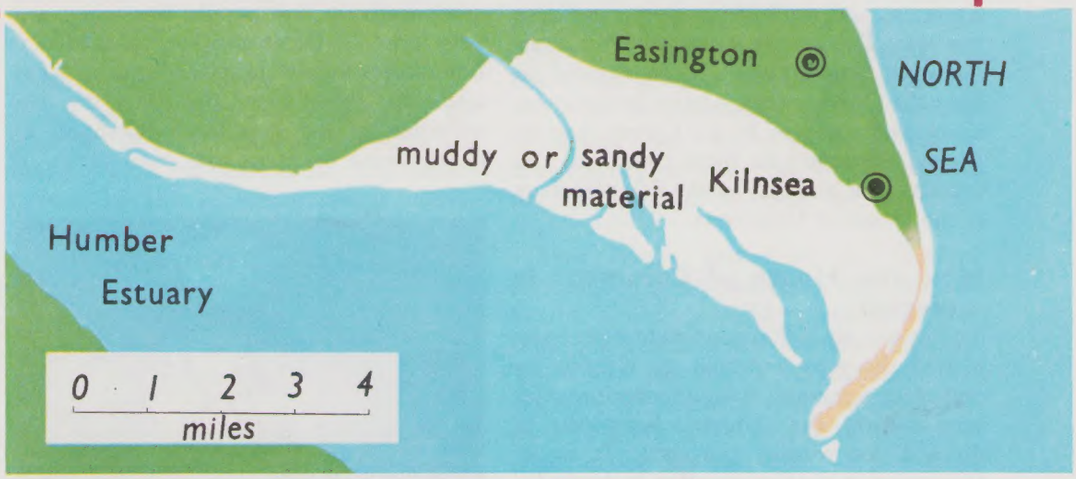
This material is to some extent moved by currents, but most of it is shifted by wave action. If a wave breaks directly on shore, the movement of sand or shingle will be directly up and down the beach. If, however, the waves break at an angle to the beach, the material will be moved sideways. Along the south coast of England, where the wind comes mainly from the south-west, the waves break in such a way that the beach material is moved from west to east. If you stand with your feet in the sea, facing the land, and the waves are approaching from the left, each wave sweeping up the beach will carry material across to your right. As each wave recedes, it tends to drain off directly down the slope, so that the sand or shingle is carried straight back towards the sea. Each wave therefore tends to move material to your right. Experiments have been carried out to try to find out how far such material is moved in this way over a short period of time. By using coloured pebbles or pieces of brick, it has been found that waves backed by a strong wind will move pebbles as far as 30 feet a day.

Deposition by the sea

Although currents are able to move material sideways along a coast, the deposition of it above the level of mean (average) high tides is due solely to the action of the waves. Obviously currents alone are unable to carry material above the level of the sea, but the enormous waves driven by violent storms are capable of flinging material to considerable heights above the normal water mark. There are instances of such material being thrown 100 feet into the air against lighthouses. A pebble beach often descends in a series of steps. The highest ridges of pebbles are those thrown there by waves during storms. Sometimes a road running near such a beach becomes completely blocked by pebbles after a severe storm.

One of the more common forms of deposition is the off-shore bar. Its formation is connected with the plunging of waves and for that reason it is most common on those coasts where there is little tide – for example, the Mediterranean. Even there the waves vary in size and thus break in different places according to the wind and tide, and generally more than one bar is formed. A big tidal range means that waves rarely break for long in one place, and the formation of off-shore bars is rare.

Another form of deposition is the spit. This is a long ridge of sand or pebbles, which runs more or less parallel to the coast-line. Spits are well represented around British coasts and Spurn Head in Yorkshire is a famous example. This has been formed by the arresting of the southward drift of sand along the coast by the groynes that have been constructed there.



The spit at Spurn Head, Yorkshire

The sand and pebbles have been thrown above the ordinary high-water mark during heavy storms. It is estimated that the spit has been growing at an average of about 13 yards annually for the past 200 years, but the growth has been very irregular.

Some of the additions to the land are due to the accumulation of mud in estuaries. Sometimes silt is brought down by rivers, but this is not always the case. In the Humber estuary, for example, silt is brought in by the tide, and it has been estimated that 290 square miles of land have been added since Roman times.

The mud naturally settles in the creeks where the movement of water is at its minimum. In time the mud becomes colonised by plants which are able to withstand conditions of frequent immersion in salt water and which anchor the loose mud and so prevent it from being washed away again. Eventually the mud becomes marshland, which is very often reclaimed to make excellent pasture for cattle and sheep.

A parliamentary candidate holds an outdoor election meeting in his constituency

THE GENERAL ELECTION

THE last British General Election was held in October 1959. The Conservative and Unionist Party and its supporters gained 365 seats, the Labour Party and its supporters 258 seats, the Liberal Party six seats, and an Independent candidate one seat. This is why we now have a Conservative Government. To be entitled to form the Government, a party leader must be invited to do so by the Queen, and to govern efficiently he must command the support of a majority of the 630 members of the House of Commons.

How the House of Commons is elected

To become an MP, a candidate must have gained the most votes in an election in one of the 630 small areas or constituencies into which the United Kingdom is divided for voting purposes. It is in this way that the Government is chosen by the people. Everyone is entitled to vote when he is 21, unless he is a peer with a seat in the House of Lords, is of unsound mind, has been found guilty of breaking the election laws within the last five years, or is in prison for any serious crime. In some countries – Australia, for example – voting is compulsory. In Britain it is voluntary. At the last General Election 78·7 per cent of the electorate voted.

General Elections must be held at intervals of not longer than five years. The latest possible date for the next General Election is October 1964. The Prime Minister has the right to advise the Queen to dissolve Parliament and so to determine the date of the next General Election.

Each of the 630 constituencies contains an average of about 57,000 voters. The sizes of the constituencies vary in area according to the density of population. In a crowded city like London, they are small. In the north of Scotland, where comparatively few people live, they are very large. So far as possible, constituency boundaries follow the boundaries of local authority areas. Over the years the distribution of the population changes. It is necessary to revise the boundaries of constituencies from time to time, or some would come to contain many more voters than others. When revisions are made, the total number of constituencies, and therefore Members of Parliament, may be slightly increased or decreased.

Completed ballot papers are placed in boxes at polling stations

The registration officer for each constituency, who is normally the clerk of the local authority, compiles a register of everyone who is entitled to vote in it. This is revised annually, which means that every year each householder in the constituency must fill up a form giving particulars of everyone in his household who appears to be qualified to vote. Writs of Election are issued soon after the proclamation summoning a new Parliament. In each constituency the returning officer – the sheriff, mayor, or chairman of the urban district council – is responsible for conducting the election in accordance with the rules made by Parliament. He must publish the Notice of Election not later than four o'clock in the afternoon on the second day after the receipt of the Writ. Candidates must deliver their nomination papers within eight days of the Notice of Election. Polling day will be 17 days after the Notice of Election. In counting the days, Sundays, Christmas Day, Good Friday, and Bank Holidays are disregarded.

Standing for election

All those who are entitled to vote are also entitled to offer themselves as candidates provided they are not: undischarged bankrupts; clergymen of the Church of England, Church of Scotland, Church of Ireland, or the Roman Catholic Church; holders of certain offices under the Crown

– such as judges, Civil Servants, and members of the regular armed forces. A candidate need not live in the constituency in which he stands for election.

All you need to become a candidate is £150 and 10 supporters. The £150 is required only as a deposit. It is returned to a candidate after the election provided that he has received an eighth or more of the votes cast. This rule is intended to deter people from standing as candidates in elections just for the fun of it, not to keep poor men out of Parliament. Most candidates represent political parties and are financed by them. A candidate needs a minimum of 10 supporters because his nomination papers must be signed by a proposer and a seconder and eight other voters. A candidate must also sign a form of consent to nomination. This means that no one can be made a candidate against his will.

Helpers of the returning officer's staff count the votes

The election campaign

The election campaign refers, strictly, to the period between the Notice of Election and polling day. A candidate usually establishes himself in 'committee rooms' from which his helpers send out his election address, stating his policy, to as many voters in the constituency as possible. A candidate spends most of his time making public speeches and canvassing. Canvassing usually involves going from door to door, talking to people, trying both to gain new supporters and to get known supporters to promise to vote. His helpers will also canvass on his behalf. Sometimes opposing candidates meet in public in order to debate controversial issues.

Before polling day, each voter will have received a poll card telling him where his polling station is, and when it will be open. It may be that your school is used as a polling station when an election is held. Several polling stations are established in each constituency, so that no one has too far to travel in order to vote. People who know that they are going to be away on polling day (for example, in the armed forces or on business) and people who are physically incapacitated may arrange to vote by post or by proxy. Voting by proxy means nominating someone else to cast your vote for you.

A voter at the polling station gives his name to the presiding officer, or poll clerk, who marks it on the register and then hands him a ballot paper stamped with an official mark. The ballot paper has the candidates' names on it in alphabetical order. It does not state the parties to which they belong. The voter goes into a booth, where, in secrecy, he puts a cross against the name of the candidate whom he supports. Then he folds his ballot paper, and drops it in the ballot box. A voter who cannot read or who is blind may have his ballot paper marked for him by the presiding officer. A blind person may alternatively have the help of a companion.

Counting the votes

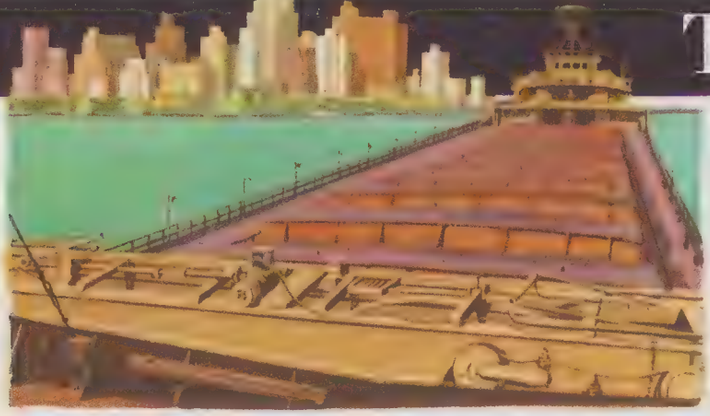
When the polling station closes in the evening, the ballot boxes are sealed and taken to a central place in the constituency chosen by the returning officer. There the ballot boxes from all the polling stations in the constituency are unsealed and the votes counted by the returning officer's staff in the presence of the candidates, their wives or husbands, and their official helpers. If the result is close, the votes will be recounted (at the request of the loser) to make sure there has been no mistake. In the unlikely event of a tie, the result will be decided by lot.

As soon as the count is over, the returning officer must declare the result of the poll. He usually does so from a balcony outside the hall where the count has taken place. A crowd will be waiting below to hear the result and speeches from the winning and losing candidates. In a small borough constituency where the ballot boxes from the different polling stations can quickly be assembled in some central place, the result may be announced on the evening of polling day. In a far-flung county constituency it will not be announced till the next day or even the day after that.

This is the procedure for General Elections in constituencies in England and Wales. There are slight variations in procedure in Scotland and Northern Ireland. There are also slight variations at by-elections in England and Wales. A by-election is an election held in an individual constituency because the MP has died, resigned, or become a peer and taken a seat in the House of Lords.

On election night enormous crowds gather in Trafalgar Square, where the latest results are posted up

THE GREAT



A large cargo boat on the Great Lakes. In the background is the sky-line of Detroit

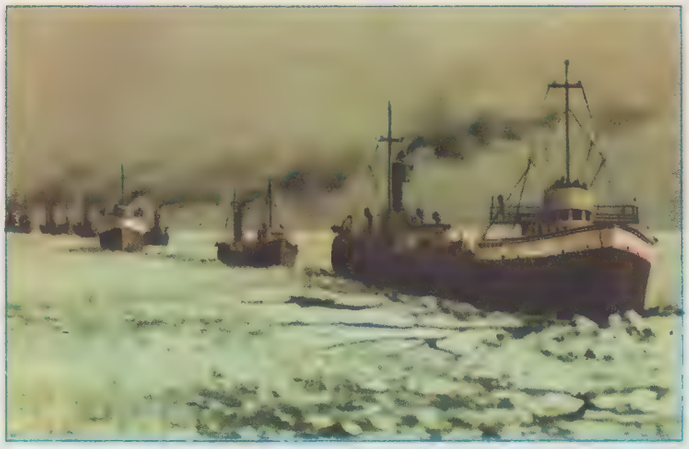
IMAGINE a chain of lakes whose area is the same as Britain's; this will give you an idea of the combined size of the Great Lakes of North America. Together they form the largest continuous body of inland water in the world, with a total area of 94,710 square miles. Four of these fresh-water lakes are partly in Canada and partly in the United States. The fifth, Lake Michigan, is entirely in the States, but by an agreement of 1909 the use of the Great Lakes is open to both countries equally.

The Great Lakes are excellent examples of lakes formed by glaciation. During the Ice Age the hollows were scooped out and the moraines (debris deposited by glaciers) which enclose them were laid down.

The lakes are so large that in some ways they resemble seas. For example, they experience storms which at times are of great violence. On one terrible night in November 1913, 13 ships were sunk and 23 lives were lost.

The winds blowing over the lakes form waves which, like those of the oceans, are responsible for the formation of beaches. In winter, however, the waves are stilled. A mass of cold Polar air moves rapidly south over the continent, and ice seals the lakes. Sometimes ships are taken unawares and held fast in it. Ice-breakers are used to keep the shipping lanes open as long as possible, but this does not prevent the closure of the lakes to navigation for about four months every year.

Ice-breakers at work. Their activities prolong the navigation season



A busy waterway

Before the coming of the Europeans the Great Lakes saw little activity except the occasional Indian canoe. Now they are one of the busiest waterways in the world. Although there are differences in level between the lakes, a system of locks and canals has made navigation between them possible. But not all the awkward drops in level are simply obstacles; the great Niagara Falls, between Lakes Erie and Ontario, for example, provides a valuable source of

hydro-electric power for much of the eastern part of the continent. The lakes play a major role in the important iron and steel industry. The bulky raw materials have to be transported long distances from where they are mined to where they can be made into steel and used for industrial purposes. The Great Lakes provide the means of transport for a large proportion of this traffic. At the western end there are vast iron ore deposits where numerous mines have sprung up. At the eastern end, in Pennsylvania, coal deposits are found which are suitable for the manufacture of steel. It is largely between these points that the great cargo ships of the lakes pass to and fro.

The Mesabi range at the western end of Lake Superior has for long been an important source of iron ore, the transport of which is the greatest single item of the lakes' traffic and amounts to

LAKES

about 50 million tons a year. Other commodities are also shipped in vast quantities. The movement of coal sometimes exceeds 45 million tons. Limestone is also used in the manufacture of iron and steel, and over 25 million tons are carried on the lakes each year. The grain, principally wheat, is grown on the prairies to the west of the Great Lakes, and this is rushed from Chicago, Fort William, and Port Arthur before the lakes freeze over at the close of the year.

A map showing the physical characteristics of the Great Lakes, and the location of some of the larger towns on their shores

Fishing

There is plenty of traffic on the Great Lakes apart from industrial cargoes. Passenger ships, car ferries, yachts, and above all fishing boats are also to be seen. The fishing season lasts longest along the southern shores of Michigan, Ontario, and Erie, but less than eight months in parts of Lake Superior. White fish, bass, pike, perch, sturgeon, and herring are caught in Lake Erie, while Michigan is noted for its smelts and Lake Superior for its white fish.

The earliest settlers found the lakes teeming with fish, but now they have been severely depleted. Not even the annual freeze-up stops fishing. Long ago, Indians used to fish through a hole cut in the ice, and fishermen do the same today. You can even hire a taxi to drive you across the ice to one of the fishing holes.

The lake shores

Many ports have developed along the bustling shores of the Great Lakes, mostly at the mouths of the short rivers which flow into the lakes. The unlimited quantity of fresh water probably helped to attract settlers to this area. Some of the ports, like the Lake Erie cities of Toledo, Cleveland, and Buffalo, are flourishing manufacturing centres, while Detroit is the centre of the United States motor industry. Toronto, one of the two largest cities of Canada, is on Lake Ontario; the other, Montreal, derives its importance from its position on the St Lawrence Seaway which connects it both with the Giant Seaway (see page 369), and, via the Great Lakes, to the very heart of the American continent. These densely populated towns depend on the main Mesabi-Pennsylvania artery for their supplies of coal and iron.

The largest lakeside city is Chicago, with a population of over 3½ million. It is one of the shipping cities for the grain grown further west. But its prosperity does not come solely from its activities as a port. It is one of the great railway centres of the United States, and much of its industry is centred on production for the railways. Agricultural machinery is manufactured and sold to the farmers of the Great Plains, while agricultural goods are processed. The meat packing industry of Chicago is world famous.

Despite the wharves and docks which dominate so many of the lakeside towns, industrialisation has only affected a small fraction of the total length of the shoreline.

Lakeside agriculture

At one time the whole region was a huge forest. During the last 100 years much of this forest has been cut down, either for timber or to clear the land for farming. Some areas, such as the northern shore of Lake Superior, are still forested, while others are carefully cultivated. Some of the most important agricultural land of Canada is on the northern shores of Lake Ontario and Lake Erie. Around the margin of the lakes the weather is comparatively warm, and this has enabled fruit-growing to prosper in some inland areas. Once again the vast surface area of the lakes acts like the sea. It retains heat longer than the surrounding land and acts as a warming influence in winter. Apples are a speciality along the Ontario shore, while peaches and even vines can be grown in certain places along the shore of Erie.

lake	*area in square miles*	*length in miles*	*breadth in miles*	*depth in feet*	*feet above sea level*
Superior	31,820	350	160	1,290	602
Huron	23,010	206	183	750	580
Michigan	22,400	307	118	923	580
Erie	9,940	241	57	210	572
Ontario	7,540	193	53	778	246

Total area of the Great Lakes 94,710 square miles; of which 61,015 square miles are in the United States and 33,695 in Canada.

A view of Machu Picchu, the Inca city built 8,000 *feet above sea-level, in an almost inaccessible part of the Andes. Its isolated position among the mountains made it an excellent fortress, and meant that for many years it lay forgotten except in Indian legends*

An Inca – one of Peru's vanished race

A modern Peruvian Indian

The geographical position of Machu Picchu

ONE July morning in 1911 a young American explorer, Hiram Bingham, and his Peruvian guides reached the foot of a mountain in a remote part of the Andes in Peru.

Through the warm valley, full of orchids and ferns and exotic butterflies, flowed the river Urubamba. The party crossed its dangerous rapids on a primitive bridge made of logs lashed together with vines. The path up the mountain was steep and narrow, and there was always the danger of landslides. But Bingham's guides had told him there were ruins at the top of the mountain, and though such rumours were notoriously unreliable, he determined to go on.

During his climb, he stumbled on blocks of granite and a ruined wall, hidden in bushes and creepers. His excitement grew. Higher up he found terraces and houses. Then, rising above him, he saw a building which looked like a temple, and more walls of white granite. 'It seemed like an unbelievable dream,' wrote Bingham afterwards. Every yard revealed more terraces and flights of steps, until a whole city lay before him. He had found the ruins of the great fortress city of the Incas, called Machu Picchu.

Because of its inaccessibility, Machu Picchu had lain undiscovered for centuries. It was built in the remotest part of the central Andes, on top of a narrow ridge, surrounded by a deep canyon with sheer granite cliffs about 1,000 feet high. The city lies in a saddle between the two peaks of Machu and Huayna Picchu, and the paths up the steep cliffs are difficult and dangerous.

Builders of Machu Picchu

The Incas were the rulers of Peru when Machu Picchu was built, and also when the Spaniards arrived in the 16th century (see page 1190). There was a tradition that they had come from Asia in the 11th century, settling at Cuzco. Their empire spread until at its greatest it was about 600 miles wide by 3,000 miles long.

They ruled over the original Indian inhabitants of the country. There were two sorts of Inca 'nobility': nobility of blood (the true Incas), and nobility of privilege, given to certain helpful people of Indian blood. Inca rule was dictatorial but on the whole beneficial, controlling every aspect of the daily lives of the people.

THE LOST CITY OF THE INCAS

The buildings of Machu Picchu are very like those of Cuzco; Inca pottery and remains have been found there, and there is no doubt that the Incas planned the city as it stands today. But our knowledge of Inca civilisation is limited by the fact that they had no written records; they used instead a complicated system of coloured and knotted cords. In some Inca cities these have been preserved, but unfortunately the damp air of Machu Picchu destroyed any left there, and so much valuable information about Machu Picchu has been lost.

You will realise that Machu Picchu is something of an architectural miracle when you think of all the difficulties the Incas had to contend with in building it. First and foremost, they had no form of wheel. This meant that they could have no carriages or carts, and their materials and supplies had to be carried by men or llamas. Moreover, the only tools they had were stone hammers, and bronze crowbars and chisels; iron and steel were unknown to them.

A natural fortress

On the south side of the city there is an outer wall which runs along a tier of terraces on which crops were grown. These terraces are so steep that the stairs joining them are sometimes more like ladders. There is also a dry moat and an inner wall running along the top of the ridge and down each side, until it reaches precipices which form a natural defence. These walls are too high to be scaled easily, and attackers would have found it all but impossible to overcome a vigorous defence, even if they had survived the gruelling march they would have had to make before they reached the city.

Space in Machu Picchu must have been very limited, for the houses are crowded together. However, the system of narrow streets and stairs hewn out of rock should have made it easy to move about the town.

One of Machu Picchu's temples

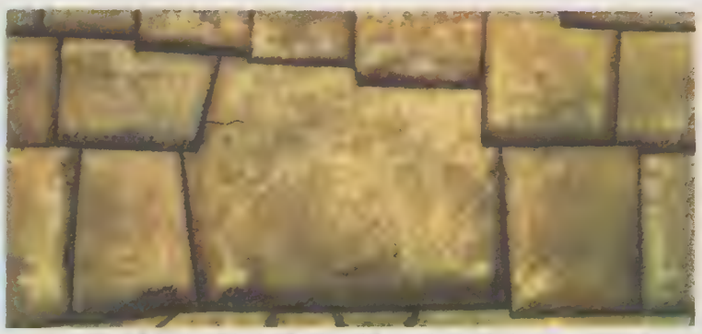
Buildings of Machu Picchu

Houses in the city were built in groups, each group for one of the different clans who lived there. The better houses were made of polished ashlars (square-hewn stones), fitted together so perfectly that no mortar was needed to join them; some houses may have had a plaster coating. Poorer houses were built of smaller stones laid in clay and only roughly finished. Roofs were made of thatch; in Machu Picchu roofs were more steeply angled than in most Inca buildings. This was to keep away the mountain rain. The houses had few or no windows, and were simply furnished.

Perhaps the most beautiful building in Machu Picchu is the Semicircular Temple, built of white granite blocks. Another temple has walls 12 feet high, also of white granite, in which there are beautifully made niches. Under the seven niches in the rear wall is a huge stone block, perhaps an altar or a throne.

The city's water supply came from several springs on the mountainside about a mile away, and was carried to the city by narrow stone pipes, crossing the moat by an aqueduct.

We will probably never know exactly why or when Machu Picchu was deserted. It may have been a stronghold of the last free Incas, who resisted the Spanish conquest. Possibly one reason for abandoning it was the difficulty of supplying several thousand people with water; in the dry season the mountain streams provided only just enough for Bingham and his party. But abandoned it was; the Spaniards never reached it, and for almost 400 years it lay undiscovered among the mountains of Peru.



A wall at Machu Picchu built with perfectly fitting stone blocks

A sundial stone which played a part in Inca religious ceremonies – the ruling Inca was said to have been a descendant of the Sun

JOHN KNOX

John Knox (*c.* 1513–1572)

FEW religious leaders in 16th-century Britain died of old age. More and Fisher were executed for defying Henry VIII; Cranmer, Latimer, and Ridley were burned by 'Bloody' Mary; while Campion and Mayne suffered their martyrdoms in the days of Queen Elizabeth. John Knox was one of the lucky ones. When he died on 24th November 1572, it was the peaceful death of a man who, as he said, 'had tired of the world as it had of him'. But by the time he had tired of the world, Knox had left an indelible mark upon it; to him, more than any other man, the Scottish Kirk of today owes its character and doctrine.

Knox was rather small, with deep-blue eyes and a fierce expression on his powerful face. Above all he had a voice which, said the English envoy to Scotland, 'could in one hour arouse more fire in men's bellies than could 500 trumpets'. He was a harsh man, extreme in an age of religious extremists. He was a rigid disciplinarian, severe in his judgements and certain of his rectitude. Armed with a fervent belief in himself, he engineered the change in the religion of Scotland from Roman Catholicism to the Protestantism of Calvin. With this religious change Scotland renounced her traditional alliance with Catholic France, and linked her fortunes with England.

No one knows when John Knox was born; a widely accepted date is 1513. His early years are almost a complete mystery. His father was William Knox, a prosperous East Lothian peasant. John was born in or near the village of Haddington. He was educated at St Andrew's University and possibly at Glasgow University as well, but it was not until 1543, by which time he had become a priest in the diocese of St Andrew's, that we know anything for certain about his life.

An ardent Protestant

He seems rapidly to have absorbed the anti-papal doctrines which were spreading through Europe, and when the famous 'reforming' preacher, George Wishart, arrived in Scotland in 1545, Knox joined him as a devoted follower.

Knox was now plunged into the turbulent political and religious conflicts of mid-16th-century Scotland. King James V died in 1542 and his one-week-old daughter, Mary, became Queen. The traditional ally of Scotland was France, and because the Scottish government hoped to marry Mary to a French prince, she was taken to France to be educated and brought up in French ways. France was then under the domination of the powerful Catholic family, the House of Guise, and Mary's mother, Mary of Guise, was declared Regent of Scotland until her daughter grew up.

Under her influence the Scottish Catholics set out to crush the reformers, and in 1546 George Wishart was executed on the orders of Archbishop Beaton of St Andrew's. The reformers hit back. The Archbishop was murdered, and his castle at St Andrew's seized. Knox was invited to be the preacher to the castle's small Protestant 'garrison'. He accepted, and his year as spiritual director of this dedicated group confirmed his belief that his mission was to establish the Reformation in Scotland.

The Scottish Protestants were, of course, opposed to the French alliance, and preferred to unite with their old enemy England, who had already thrown off the Papal allegiance. The French therefore had a political as well as a religious reason for destroying the Protestant party in St Andrew's. In 1547 they attacked and captured the castle, and Knox found himself a prisoner of the French. For 19 backbreaking months he worked as a galley slave in French ships until, in 1549, he was released at the plea of King Edward VI. Edward was a sincere Protestant, and Knox was invited to preach in England. He became a Royal Chaplain, and in 1552 was offered the Bishopric of Rochester, which he refused. It was probably Knox who was behind the rubric in the English Prayer Book which stated that no adoration was intended by the act of kneeling before receiving Holy Communion.

It was while he was in England that he met and married Margaret Bowes, daughter of an English army officer. They had two sons before she died in 1560, and four years later he remarried. His second wife was Margaret Stewart, a 17-year-old girl who bore him three daughters.

Knox's favoured position did not last long. In 1553 the Catholic 'Bloody' Queen Mary succeeded Edward. Knox fled abroad. He was to be in exile for five years.

He used his exile well. He went to Geneva and studied under Calvin. He paid a secret visit to Scotland in 1555, and kept in close contact with the growing body of Protestants there. The Protestants included many members of the nobility. Not only were these converted to the doctrines of the Reformation; for political reasons they opposed the favoured position of Frenchmen in Scotland, and for economic reasons coveted the rich land owned by the Church. They formed an association called the 'Lords of the Congregation', and in 1559 Knox returned to lead them in war against the Catholics.

Knox triumphant

His leadership was not an unqualified advantage for his followers. The new English Queen, Elizabeth, might have helped the Scottish Protestants far more if she had not disliked their

leader. The reason for her dislike was a book he had written called *The First Blast of the Trumpet against the Monstrous Regiment of Women.* At the time of the writing of the book there had been three rulers called Mary, who were all Catholics. Knox detested them; they were Mary Queen of Scots (still in France), Mary of Guise, and Mary Tudor. But when the book actually appeared, Elizabeth was on the English throne and was bitterly resentful of this attack on women sovereigns in general.

Eventually, however, England did send help. The Catholics were defeated in 1560, and an alliance with England signed. Knox was now the most influential man in Scotland, and the new official religion of Scotland was formulated on his principles.

These principles were drafted into a 'confession' of which Knox was the chief author, and also the *Book of Discipline* which gave details of the Church organisation in Geneva, which Knox had noted during his stay. Knox's reformed congregations were to select their own ministers and elders who would preach and instruct and lead discussions. Bishops and priests were to be dispensed with. This was the Presbyterian system. It obtained its name from the 'presbyters', who were the elders of the early Christian Church.

Knox had seen in Geneva how a city could be run wholly on Church principles. He wished to do the same for Scotland. He wanted the Scottish Church to administer vast tracts of voluntarily donated land, and from its revenues pay for education and poor relief. This scheme was never completely adopted, although the Church did become a great landholder, and shared the responsibilities of education with the State, and took over the administration of the Poor Law.

Conflict with the Queen

In 1561 Knox's world was turned upside-down once again, when Mary Queen of Scots returned to claim her crown. In defiance of the new religious settlement she heard Mass in her private chapel. From then on Knox's task was to preserve what he had won.

Knox was one of the few men never swayed by the charms of his Queen. Throughout his life he remained her constant enemy. Her half-brother, James Stuart (afterwards Earl of Moray), tried his best to reconcile them, and arranged meetings between the two.

There are touching stories of this poor young girl reduced to tears by the harsh rebukes of the stern Knox; but by all accounts she gave as good as she got, beginning the discussion with 'Ye have taught the people to receive another religion than their princes allow; how can that doctrine be of God seeing that God commands subjects to obey their princes?' But the scandals of her private life led to her being deposed in 1567, and when she fled to England she became a prisoner for life.

Scotland still had to pass through the dark days of civil war. Another baby, James VI, was on the Scottish throne, and his mother, Mary Queen of Scots, always provided a focus for Roman Catholic plots until her execution in 1587. But in fact the religious settlement was safe when the moderate Moray became Regent in 1567.

Knox's health rapidly grew worse and he spent the remaining years of his life in virtual retirement. Occasionally he would deliver one of those vitriolic sermons which used to resound with such regularity throughout the ranks of Scottish Protestantism. But his life's work was accomplished and his life itself nearly over. In the autumn of 1572 he went to Edinburgh where he died in the comforting presence of his wife and three young daughters.

Today when the Queen visits Scotland she leaves her Anglicanism behind her and becomes, officially, a Presbyterian. That this should be so is due to John Knox, Father of the Scottish Reformation.

Mary Queen of Scots listens to a reproving sermon from Knox

PEOPLE OF ARABIA

MANY Arabs live in the peninsula bounded by the Persian Gulf, the Gulf of Aden, and the Red Sea. This peninsula includes the Kingdom of Saudi Arabia and the Yemen, the Sultanate of Muscat and Oman, and a number of smaller units such as the British protectorate of Aden. It covers an area of about a million square miles (nearly nine times that of the British Isles), and has a population of about 13½ million. Its climate is very dry, except for the Yemen, which lies within the monsoon belt and so receives a certain amount of rain. It is also very hot, with a maximum summer temperature of about 112°F. Yet the peninsula has been inhabited since early times.

Geographical position of the Arabian peninsula

NOMADS AND TOWN DWELLERS

The Arab population is divided into two sections: the nomadic tribes, who are called Bedouins, and the people who inhabit the coastal towns and villages. The latter live by agriculture and commerce. The Bedouins, on the other hand, wander from place to place; they are for ever on the move in search of food and water for the animals which are their livelihood.

A typical open-sided Arab tent with its roof made of strips of black camel's wool. In the foreground on the left is a desert Bedouin in traditional costume; and

The Arab men wear one of two kinds of headdress. The one on the left, below, has a home-made turban which consists of a piece of cloth wrapped around the top of the head. The other one is wearing the traditional headdress that falls over the cheeks

THE BEDOUINS

The Bedouins are the true descendants of countless generations of Arabs. They are tough and rugged, with dark features, large eyes, and oval faces. Their dress is very simple. The men wear a loose white robe with a belt around the waist, narrow trousers, sandals, and a black-and-white striped gown called a *burnous*. On their heads they wear either a turban or a square of silk that hangs down over their necks and cheeks to protect them from the sun. The women wear a similar robe, and traditionally they have a veil covering their faces except for the eyes.

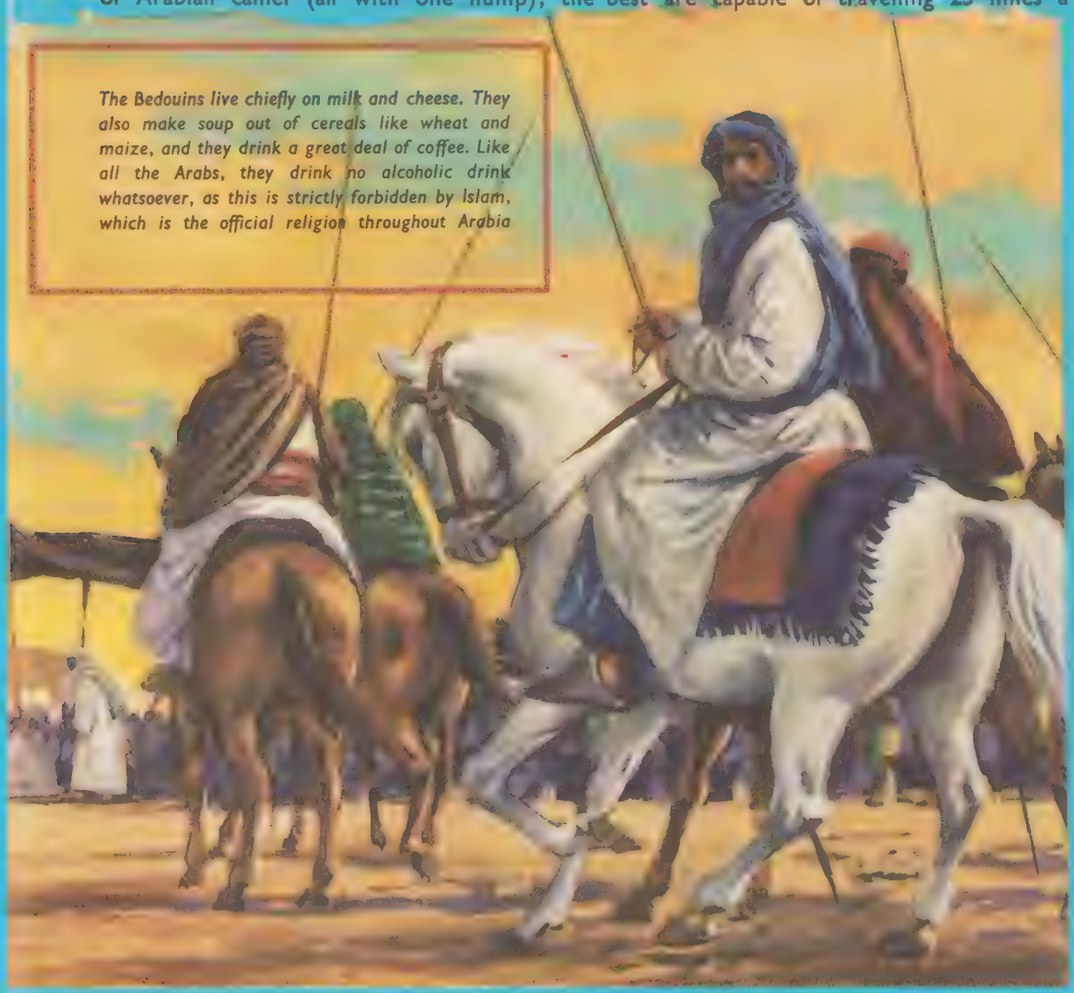
TENTS FOR HOUSES

The Bedouins have only very rudimentary homes, because they are constantly on the move. These take the form of tents, made of stakes driven into the ground, with long rectangular strips of woven camel's wool slung across them to make a roof. Sometimes similar strips of wool serve as walls, but more often the sides are left open. A hanging cloth divides the tent into two parts, one for the men and one

for the women. There is only a bare minimum of furniture: a few carpets and cushions to sit upon, a stove, and something in which to keep food. Indeed this is all the Bedouins can manage, moving about as they do.

LIFE DEPENDS ON ANIMALS

There are many tribes of Bedouins. Each is ruled by a *sheikh* who has complete power over his subjects. The Bedouins' lives revolve around their animals. Once the famous Arab horses were an important item in their economy; but nowadays these are in less demand and sheep, goats, donkeys, cows, and camels are more important to them. Of these animals camels are by far the most useful. Apart from providing hides, leather, and wool, they are the normal form of Bedouin currency. Camels are also the principal means of transport; for centuries they have been called 'ships of the desert'. There are several different breeds of Arabian camel (all with one hump); the best are capable of travelling 25 miles a day in the height of the summer, at the same time going without water for up to four days. When put out to graze in the spring, these camels can dispense with water for up to a month.



The Bedouins live chiefly on milk and cheese. They also make soup out of cereals like wheat and maize, and they drink a great deal of coffee. Like all the Arabs, they drink no alcoholic drink whatsoever, as this is strictly forbidden by Islam, which is the official religion throughout Arabia

on the right is a group of shepherds mounted on horses

THE INHABITANTS OF THE COAST

The Arabs who live by the coast lead a very different kind of life from their wandering Bedouin compatriots. Settled as they are in towns and villages where the sea makes communications and transport easier, the people devote their time to trade (in the big towns) and agriculture (in the villages). Settled Arabs represent approximately seven-eighths of the total population. The pure Arab blood of these people has been diluted to a greater extent than that of the Bedouins, by interbreeding with immigrants from other countries, above all with negroes from Africa.

Life in Arab villages is in certain respects quite similar to that of the Bedouins. The same strict division into tribes exists, and in the same way each of the tribes is headed by a sheikh who rules his people in accordance with the laws of his particular tribe. The sheikh owns most of the land in the village, and it is cultivated by the peasants, who are called *fellahin* in Arabic. Peasants usually also have their own little pieces of land, on which they grow the food that they need for themselves. Their houses generally only have two rooms: one for the family, and one where the animals and farm implements are kept. The principal crops are dates and coffee. Sheep are the village Arabs' main animals.

IN THE TOWNS

Life in an Arab town is much more like ours. Nowadays many Arabs wear European clothes. Although there are many goldsmiths, coppersmiths, and weavers, most town Arabs are engaged in the export of Arabia's natural products. Formerly these were chiefly agricultural, but recently oil has become the main source of revenue. There are plentiful resources of oil beneath the Arabian desert, which have only recently been tapped. Although they do not drill for it much themselves, the Arabs draw large sums in the form of royalties from foreign companies exploiting the oil within their territory.

TOWER-LIKE HOUSES

Illustrated below is a typical building in a Yemeni city. It has many stories because of the lack of level building space, which has forced the Arabs to build upwards rather than outwards. Each such house is inhabited by a large number of related families.

The most important city in Arabia is Mecca, the capital of Saudi Arabia, and the focal point of Islam (see page 2012), the religion of nearly all Arabs and the majority of the peoples of the Middle East and North Africa. Every Muslim tries to visit Mecca at least once during his life.

A characteristic tower-shaped house in the Yemen

TUNISIA – history

IN the 7th century A D the Arabs conquered North Africa. This movement of people left its mark deep on the area, for it gave it the predominantly Muslim and Arab character that it has today.

Before the coming of the Arabs, what is now Tunisia was in turn the centre of the Carthaginian Empire, and a Province of the Roman Empire; it was also briefly occupied by the Vandals and then the Byzantines. In the 7th century it was captured by the Arabs. Since that time Tunisia has had many different rulers; Berbers, Normans, Moors, Turks, and French were all in control at one time. Yet the most important mark was left by the first Arab invasion – today Tunisia is still mainly Arab-speaking and Muslim in religion, and it was under the Arabs that the city of Tunis, now its capital, first became important for the Arabs destroyed Carthage, the original capital of the Province.

Changing rules

For 400 years after the Arab invasion, the history of Tunisia is confused. Different Arab and Berber factions ruled the country until 1148, when Roger II, the Norman King of Sicily, established his authority over the Tunisian coast. His rule was soon ended by the Caliphs of Morocco. Moroccan rule lasted until 1336, when the Moroccan governor of Tunis set up an independent dynasty of his own. Under the Hafsids, as the new dynasty was called, the state of Tunis reached the height of its power, and the city of Tunis became the most important in North Africa after Cairo. The dominions of the rulers of Tunis stretched from Tangiers to Tripoli. They successfully beat off the crusading army of Louis IX (see page 1124), the French King. In this period the rulers of Tunis filled the city with magnificent mosques and schools, and took a great interest in literature and education, despite the fact that their rule was often troubled by family dissensions and rebellions. In 1534 Turkish pirates drove the last Hafsid ruler from the throne. The Turks were vigorously opposed by the Emperor Charles V (see page 1530) and his Italian admiral Andrea Doria. However, in 1574 the Turks assumed control of the state of Tunis.

The first line of Turkish rulers of Tunis were called *deys*, and were elected by a military council. However, from 1631 the power of the deys was overshadowed by that of the *beys*, the tribal leaders. In 1705 the first bey to rule, Hussein ben Ali, was proclaimed sovereign by the tribes. The rule of the beys in Tunis lasted almost to the present day. Tunis under the beys and the deys was a pirate state, and piracy was the main source of the country's revenue. As late as 1819, the Great Powers who had met the previous year at Aix-la-Chapelle sent a Note to the bey asking him to abandon piracy. In the 19th century the state of Tunisia went rapidly downhill. Only one-tenth of the fertile land was under cultivation. Taxation was extremely heavy and the rulers had to borrow vast sums of money in Paris. The result was that by 1869 Tunisia was bankrupt. The Great Powers now began to take an interest in Tunisia, and there was considerable rivalry between France, Britain, and Italy. In 1878, at the Congress of Berlin, Britain agreed to give France a free hand in Tunisia; in return for this, France undertook not to oppose the British administration of Cyprus.

Tunisia under the French

In 1883 Tunisia became a French Protectorate – special rights were given to the Italians, who were the commercial leaders of Tunis.

The nominal ruler was still the bey, but the French now exercised power. However, nationalist opposition to French rule, which had begun before the First World War, crystallised in 1920, with the formation of the Destour (Constitutional) party. In 1925 the French deported the leaders and broke up the movement. In the 1930s nationalism revived when Habib Bourguiba founded the Neo-Destour party. In 1938, after a clash with the police, 200 nationalists were arrested.

The Tunisian flag together with a map of Tunisia today, and a picture of the president, Habib Bourguiba

In the Second World War the collapse of France brought Tunisia under the harsh rule of the Nazi puppet leaders of Vichy France. The Germans occupied Tunisia in 1942 and used it as a strategic base for the conduct of the battle for North Africa.

After the war nationalist agitation began again. From 1949 onwards Bourguiba campaigned for independence. In 1952 the French government was prepared to concede partial self-government, but this was rejected by the bey as inadequate. In 1955 France recognised the independence of Morocco, Tunisia's neighbour, and in 1956, following increased pressure, both inside and outside the country, granted complete independence to Tunisia.

In Tunisia's first general election all the seats in the Assembly were won by Bourguiba's National Front party, which, in July 1957, proclaimed a republic. The rule of the beys was ended and Bourguiba became Tunisia's first president.

After Algerian independence Franco-Tunisian relations became strained. Tunis supported the Algerian rebels before Algeria gained independence, and in 1961 French and Tunisian troops clashed when Bourguiba unsuccessfully tried to oust the French from their base at Bizerta.

[Erich Vetter

Ursus horribilis imperator

[Toni Angermayer

One of the most dangerous of all buffaloes – the water buffalo

WHICH IS WORLD CHAMPION?

The lion has been called the 'King of Beasts' – but there are animals which could probably beat it in 'a fair fight'. Which animal, then, has a right to be called world champion – or has any animal a right?

[Erich Vetter

The tiger – champion in ancient Rome

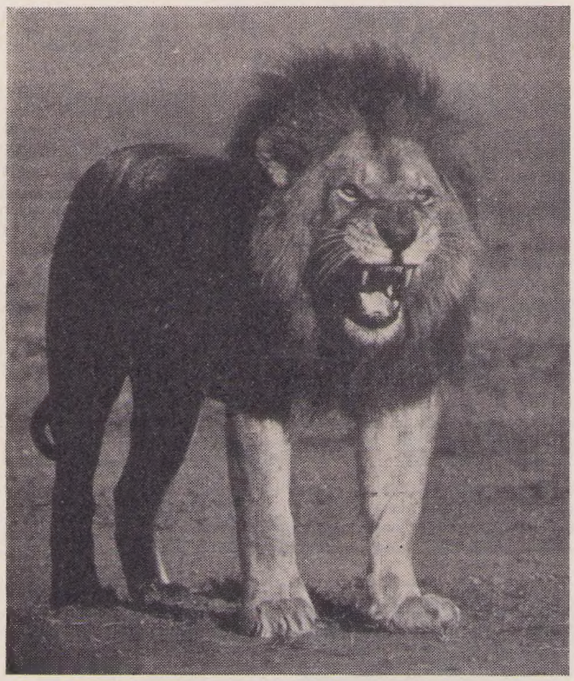
WHEN animals fight it is usually among their own species, but there are times when fights between different sorts of animals do occur.

One of the most famous of these fights never occurred at all – it took place in Rudyard Kipling's short story about a mongoose called Rikki Tikki Tavi and a cobra – the mongoose won. Actually the outcome of snake versus mongoose contests in real life are by no means certain. The mongoose is not immune from snake venom and must rely on its speed. Against the slower striking cobra it usually wins, but this is not always the case against other snakes.

Nature's overlords

But the mongoose kills snakes naturally – the most interesting animal fights are those which occur neither normally nor naturally. These are the fights between what might be described as 'nature's overlords' – animals which have little to fear from any other animals in their territory: the lion, tiger, hippo, elephant, buffalo, rhino, crocodile, bear, and so on. On the whole any of these animals which live in the same area avoid each other, but occasionally clashes do occur. They may be caused by invasion of territory by another animal, or it may happen that a wounded animal is attacked by others. A mother will fight to protect her young. There was a recent instance of a hippo fighting a crocodile which had attacked her calf. Both animals died as a result of the fight.

Not enough of these fights have been witnessed to construct a championship table of the animal kingdom. There have been callous attempts to pit different species against each other in artificial contests. The Romans used to stage fights between lions and tigers, and the tiger usually won. This is not surprising, as the tiger is, on the whole, a larger animal.



The lion – neither the strongest nor most dangerous of the cat family

As far as can be seen there is no animal which can be relied on to beat a grizzly bear (*Ursus horribilis imperator*). In America a contest was arranged between a lion and a grizzly, in which the grizzly came off best. It is, of course, a much larger animal than the lion, and can deliver tremendous blows with its front paws. Grizzlies have also been known to kill bull bison.

The African and Indian buffalo can be fierce and very dangerous. In India fights between tigers and buffaloes have been staged, and the buffalo has usually won, spearing its adversary with its long horns.

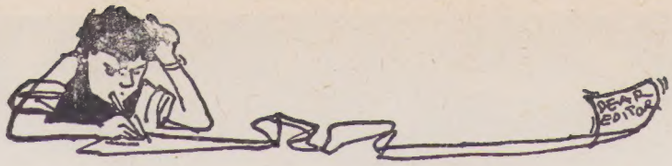
The rhino is a dangerous and an unpredictable animal. At the beginning of the 16th century a fight between a rhinoceros and an elephant was staged in Portugal. One account of the fight tells that the two animals were brought in cages into a barricaded street, one at each end. The rhino seemed tremendously eager to get at his adversary, whereas the elephant remained quite calm. When the rhino was let out, it lowered its head and advanced slowly towards the elephant, who was still unruffled. Suddenly the rhino lost its nerve, turned tail and fled, smashing into a barricade in an attempt to escape. The elephant turned round majestically and ambled back into its cage.

In fact, the elephant really deserves its title of Lord of the Jungle – every animal will make way for it, as not one seems to doubt its pre-eminence.

The elephant. It has a perfect right to its title of Lord of the Jungle

A new way to determine the age of stars has been developed by the University of California's Lick Observatory. The system is based on the theory that young stars are rich in lithium, a silver-white metal, which drops off as a star ages. To find out a star's age, a photograph of its spectrum is taken. This reveals the dark lines characteristic of the various chemical elements, and the 'lithium line' is then interpreted.

You write – thousands read!



Carnival in Malta

DEAR EDITOR—Carnival in Malta takes place four days before Lent, and is full of fun and colour.

On the Saturday before Ash Wednesday, in the streets and squares of both towns and villages, two rows of dancers dressed up as Knights and Turks swing and swirl around a single girl dancer, dressed in red and white national colours, to recall the Great Siege of 1565.

In Valletta's main square, named after Queen Victoria, a high pole is erected. At the top is a basket full of pigeons, and the pole is surrounded by branches. The top few feet, just below the basket, are well greased with lard. Young men try to climb the pole to release the pigeons, cheered on by the crowd as they scramble up through the branches. The one who is successful claims the prize money – which the pigeons were sitting on.

The grand carnival procession is on Sunday evening. Huge, grotesque masks, making their wearers look like creatures from another world, parade among the crowds. One group this year was actually called Men From Outer Space. Trucks disguised to look like anything from a skyscraper to a bird's nest crawl through the streets followed by companies of people in fancy dress.

As the procession passes, it is showered with confetti and sugar almonds, specially made for this great day.

Carmelo Inglott,
335 St Paul Street,
Valletta,
Malta, G.C.

Caves of France

DEAR EDITOR—I was interested in your article on Caves (*Knowledge* No. 126). The caves of France that you mentioned were all notable for the drawings on their walls, but there are also some which contain impressive stalactites and stalagmites.

While I was in France last year, I went to the caves at Aven d'Orgnac in the Ardeche region. These caves were not fully explored until 1935. The atmosphere inside is dank and water can be heard falling all round.

Hilary Kerslake (age 15),
7 Lichfield Road,
Kew Gardens,
Surrey.

Caves of South Africa

DEAR EDITOR—One day while my family was staying in the Transvaal, my father decided that we should visit the Sterkfontein Caves. We were given mine-lamps, and the guide showed us down the carved stone steps. Inside it was very dark, narrow and slippery.

There were many passages leading off to the sides, but the guide took the main passage. We had to crawl some of the way and I thought we would never reach daylight again.

There was a little platform sticking out from one rock, and the native guide said that the fairies danced on it every Saturday afternoon.

At last I could see sunbeams flickering on the cave walls. I looked up and saw thorn-bushes and a few wild flowers around an opening.

We found some writing carved in the rock which was very hard to read. My father told us that a Dr White had discovered this cave hundreds of years ago, and believed it to be the home of our ancestors of millions of years ago.

Jane Keech,
40 Anerley Road,
Durban, Natal,
South Africa.

Latest Fashions

DEAR EDITOR—In your letter dated 9th June you say that fashion-conscious boys are buying bell-bottomed trousers and chisel-toed shoes. But the modern boy wears hoisted trousers (which are shortened) and either ripple-soled chukka boots or Chelsea boots.

The modern girl wears long skirts, round-toed or peep-toed shoes, round-necked jumpers or butterfly collar blouses.

On the other hand, 'rocker' boys wear drainpipe trousers, leather jackets and have long hair. 'Rocker' girls wear short, tight skirts, pointed stiletto heels and have their hair piled on top.

Carol Rawlinson,
59 Ashgrove Road,
Goodmayes, Ilford,
Essex.

I must have been a few weeks out of date, Carol. Thank you for the latest news.—Editor.

Another Joke

One day an extremely fat man met a terribly thin man. The fat man jokingly said, 'You look as though there had been a famine,' to which the thin man replied, 'And you look as though you caused it.'

Peter Koster (age 14),
40 McLennan Street,
Doveton, Dandenong,
Victoria, Australia.

Fashionable Cathedral

DEAR EDITOR—Recently I had the opportunity of going to the top of Salisbury Cathedral spire. Canon Maples, the chancellor, took us up and told us that when the cathedral was built it had a tower. Then it became the fashion for cathedrals to have spires, so the architect added a spire without making any extra foundations.

When Chichester spire collapsed, people were afraid that the same thing might happen in Salisbury. Christopher Wren was called in, and now there are steel rods to keep the sides in position.

As you go up the spire and tower, you walk along a ledge and see the people milling about below. The spiral staircase passes the great bells and leads finally to a series of ladders, each 30 feet long, reaching to the very top of the spire. We lost our nerve on the third ladder.

W. J. Norris (age 11),
51 Moberly Road,
Salisbury, Wiltshire.

Cut Price

Judge: 'You admit to stealing the coat, so why should I reduce your fine?'
Prisoner: 'Because it cost me ten bob to shorten the sleeves.'

Dennis Michaels,
81 Devonshire Street,
Salford 7, Lancashire.

Home Coming

Uncle: 'Why are you reading my travel book backwards?'
Sally: 'I am on the return journey.'

R. Hazlehurst (age 15),
5 Haywood Avenue,
Deepcar, Nr. Sheffield.

Can you answer these?

1. What is meant by a 'parley train'?
2. Between which places does the train called 'The Flying Scotsman' run?
3. What is the Whyte notation?
4. When was the Stockton–Darlington railway opened with George Stephenson's 'Locomotion No. 1' pulling the first train?
5. You may have seen the token carried by the driver over a section of single-line railway. Do you know what it is called?
6. Who presses the 'dead man's handle', and why?
7. Who was known as 'the Railway King'?
8. For what did the initials L.B.S.C.R. once stand?
9. When was the first underground railway in London opened?
10. Which city in Scotland has an underground railway?
11. What is a bogie?

ANSWERS

1. *A stopping train (originally called a 'Parliamentary train'). In 1844 an Act of Parliament laid down that certain trains had to stop at every station.*
2. *London (King's Cross) and Edinburgh (Waverley).*
3. *Classification of engines by wheel arrangements.*
4. *1825.*
5. *A staff.*
6. *The driver or engineman if he is taken ill – it brings the train to a stop.*
7. *George Hudson.*
8. *London, Brighton, and South Coast Railway.*
9. *1863.*
10. *Glasgow.*
11. *Undercarriage with two or more wheel-pairs below the end of locomotive or railway carriage.*

BRAIN ? BOX

HANS EL
GRETEL
1 2 1 1 3 6 2

Can you solve the above sum in which the figures of the upper word are never less than those of the lower word? (S is greater than H.)

2. How RIGHT was Shakespeare when (a) in *The Winter's Tale* he sent messengers to the oracle on the island of Delphos (Delphi); (b) in the same play gave Bohemia a sea-coast; (c) caused Coriolanus to be influenced by his mother, Volumnia; (d) let Macbeth murder Duncan at his palace at Inverness; and (e) had Macbeth slain by Macduff at Dunsinane?
3. John often cycles over the hill to see his grandmother. It is just 12 miles altogether, the first seven miles being an uphill pull and the last five mostly downhill.

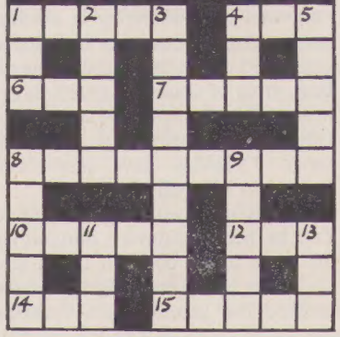
Although he goes considerably faster downhill than uphill, John finds he saves only four minutes on the return journey; it takes him two minutes over the hour to go (when there is no wind) and two minutes under the hour to return.

This rather small difference in the time surprised him the other day when he worked out his average speeds for uphill and downhill cycling on this journey. Can you calculate them?

ANSWERS

1. *687,931 plus 523,431.*
2. *He was WRONG in all five cases. Delphi is not an island; Bohemia has no sea-coast; Volumnia was Coriolanus' wife, though Shakespeare makes her his mother; Macbeth murdered Duncan in a smith's house near Elgin, and was himself slain by Malcolm at the Battle of Lumphanan.*
3. *Uphill – 10 mph; downhill – 15 mph.*

HIGH-SPEED CROSSWORD



Solution next week.

Clues Across

1. Written and printed at the same time (5).
4. Strive for superiority (3).
6. American author, Edgar Allan —— (3).
7. Areas of land suitable for building (5).
8. Home county (9).
10. Wander (5).
12. Communist colour (3).
14. Tree fluid (3).
15. Downward distance (5).

Clues Down

1. Apex (3).
2. Beg (5).
3. Exposed to view (9).
4. Tub (3).
5. County near to 8 across (5).
8. Uprights for sails (5).
9. Fight (5).
11. —— van Winkle (3).
13. This note is always a tonic (3).

SOLUTION TO LAST WEEK'S CROSSWORD

ACROSS: 2, Closed; 6, Stocking; 8, Eats; 9, Keel; 11, Balances; 12, Nelson.

DOWN: 1, Casket; 3, Lake; 4, Sentence; 5, Football; 7, Glossy; 10, Halo.

Printed in Great Britain by Purnell & Sons Limited, Paulton, Nr. Bristol

SUBSCRIPTIONS

The following magazines can be sent weekly to you, or any person at home or abroad named by you, at the following rates:

ANNUAL SUBSCRIPTION

KNOWLEDGE	£5 4 0	**UNDERSTANDING SCIENCE**	£5 4 0	**FINDING OUT**	£3 18 0
TOUT L'UNIVERS (French *Knowledge*)	£7 16 0	**ANIMALS**	£5 4 0		

Cheques or postal orders should be crossed and made payable to Knowledge Publications Limited and sent to Subscription Department, Knowledge Publications, 37 Hertford Street, London, W.1.

You should indicate if you wish your subscription to start from the first issue or the current issue. Single copies of back numbers are available at the following prices:

KNOWLEDGE, UNDERSTANDING SCIENCE, ANIMALS: 2s. **FINDING OUT: 1/6d.** **TOUT L'UNIVERS: 3/6d.**

All postage and packing paid by us

Early comic Greek mask
(Lateran Museum, Rome)

A later comic Greek mask
(Louvre, Paris)

Early tragic Greek mask
(Lateran Museum, Rome)

Greek mask representing a slave
(Louvre, Paris)

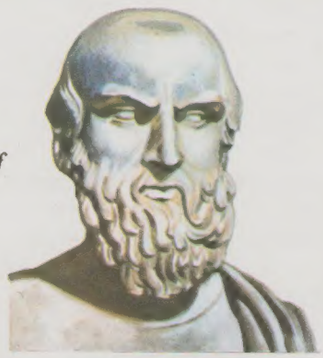
The Greek play must have looked something like a vast public meeting. The actor could not just talk to other characters; sometimes he had to shout to the audience at the top of his voice. Women's parts were always played by men. The actor must have appeared extremely small even to the people sitting in the front row. He had to act with his hands and whole body by using sweeping and exaggerated gestures. His face was hidden by a painted mask, and his height was increased by built-up boots and a knot of false hair attached to the top of the mask. His dignity was emphasised by sweeping robes and false padding. He often had to play more than one part and he changed his character by simply changing his mask or by exchanging a hero's sword for a messenger's staff. His clothes were often brightly coloured; a king wore red or purple, a widow wore black.

The chorus. The chorus was a very important element of Greek drama. It acted as a go-between, telling the audience about off-stage events. It reported on terrible battles, suicides, and murders. The members often danced in a dignified manner accompanied by flute music. In comedies choruses were often dressed as fantastic birds or other animals. At a festival a prize might be given to the best chorus, and the citizen who had financed it would erect a monument to celebrate his victory.

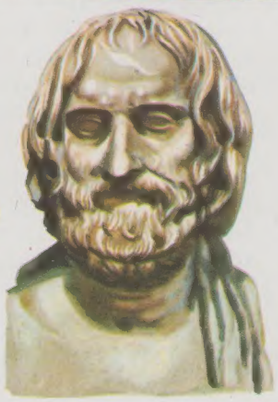
The audience. Everybody went to the theatre. It was considered a duty and poor people were admitted free. A fund was started to compensate them for the hours lost at work. The audience was almost certainly already familiar with the story, and no one expected an exciting plot. If people watched a tragedy they expected to be deeply moved and somehow feel better persons when they went away. As Aristotle defined it, a tragedy should purge the emotions through 'pity and terror'.

Aristophanes, the greatest comic playwright of ancient Greece

Aeschylus, the father of Greek tragedy



The great tragic playwright, Sophocles



Euripides, the third member of the tragic trio

The Greeks were rowdy audiences by our standards, and a crowd of twenty to thirty thousand could make a tremendous noise if they were disappointed.

The plays. The Greeks wrote three types of play: tragedy, satyr play, and comedy.

Tragos is Greek for a goat, and the goat's song or *tragedy* meant something very special to the ancient Greek. Some scholars believe that Greek tragedy did not just spring from the ritual worship of the wine god but owed a lot to the funeral ceremonies held at the tomb of a dead hero. In a tragedy the story was usually taken from old heroic legends. The hero would be a man of noble birth, but with some fatal weakness. He would be too proud or too jealous, and the gods used this weakness to bring about his downfall. In these plays the language is very grand and elaborate and the characters are much larger than life. Greek

No. 134 Volume 12

Knowledge

Printed in Great Britain by Purnell & Sons Limited
Paulton, Nr. Bristol

Published by arrangement with
Fratelli Fabbri Editori
Milan

© 1960 Fratelli Fabbri Editori Milan

© 1962 Purnell & Sons Ltd.

Theatre (part one) *Cover*
Forerunners of modern mammals *2129*
The effect of the sea on coasts *2132*
The General Election *2134*

contents

The Great Lakes *2136*
The lost city of the Incas *2138*
John Knox *2140*
People of Arabia *2142*
Tunisia – history *2144*

contents

tragedy is an important part of present-day theatre repertoires.

In the satyr plays the members of the chorus were dressed as animals called satyrs; a satyr was half man, half beast. This type of play was regarded as light relief to entertain the audience after it had watched three tragedies. The theme was more light-hearted than in tragedy; Sophocles wrote one about the god Apollo who lost his cattle and was helped by the satyrs to find them.

The word *komos* means a revel, and comedy probably grew out of the country feasts held to celebrate the picking of the olives and gathering of the harvest. The Greeks liked watching actors wearing grotesque, comic masks and enjoyed clever puns and 'slapstick'. But there was also a more serious element in the Greek comedies. Writers like Aristophanes who lived in democratic Athens were able to make fun of living politicians, and to parody over-pompous philosophers. Sometimes Aristophanes went too far, and the censors (people who had to approve the contents of a play) would fine him. It was during his lifetime that Athens was defeated by the military and 'totalitarian' state of Sparta. Then writers could no longer criticise famous people so openly, and they had to make do with creating comic types, using stock characters such as the stupid slave or the unscrupulous businessman.

The Roman theatre

The Romans translated many of the Greek plays and their theatres were constructed on the Greek pattern. But the Roman approach towards drama was much less serious than that of the Greeks. Their word for drama was 'ludus', which meant a game. The heroes of Roman plays were almost always warriors, and there was an emphasis on spectacular displays, triumphal processions, and gladiatorial combats. The audience was far more bloodthirsty than the cultured Greeks, and a 'theatrical' execution could be performed on the stage as a real execution of a live victim.

The theatre building. In the early days of Rome there seems to have been a feeling that the theatre was a bad influence, encouraging people to congregate together to behave coarsely and vulgarly, and even giving them opportunities to plot against the government. Some dramatists considered it beneath them to write for the general public, and Seneca, for example, wrote many of his plays to be read aloud in private homes. It was not until 55 B C that Rome even had a permanent stone theatre.

The spectacular Roman plays needed a much larger stage than the Greek and a smaller orchestra space because the chorus was less important. There were elaborate seating arrangements, with the rich people in boxes, where they were separated from the mob. The Romans seem to have invented the drop curtain, and in some ancient theatres we can still see the slot in the floor where the curtain was kept.

The audience. All classes went to the theatre, but in Rome the play had to compete for popularity with wrestling matches, gladiatorial fights, and elephant charges. The Roman playwright had to pander to the tastes of his audience, which, apart from blood and spectacle, included a love of rhetoric; the Greek players, on the other hand, were perhaps more concerned with what they had to say than the way of saying it. A Greek hero might die without complaint, or his off-stage death be reported by the chorus; but the Roman play would dwell in detail on all his gory sufferings.

The actor. The Romans did not share the Greek respect for actors. Actors and playwrights often began life as slaves. Sometimes a dramatist ended his play by declaring that those actors who had done well would be given free drinks, and those who acted badly would be whipped. Even if this was meant as a joke, such a joke would have been impossible at the solemn festivals of the Greek wine god. Many Latin plays were rather like operas, for the player chanted his lines to the musical accompaniment of a flute player, who stood behind the actors, darting from one to another.

Mime. Miming, or acting by gestures without using words, was very popular in Rome. Women appeared in mime performances; the Emperor Justinian actually married Theodora, a mime actress and strip-tease dancer.

The decline. By the 1st century A D the Roman theatre was being attacked by the early Christians as immoral. By the 5th century A D public performances of mime had been banned. The theatre had sunk into a very bad state; teams of hired applauders were used, and 'chuckers-out' were employed to maintain order; spectators even had to be lured to the theatre with promises that the air would be perfumed. It took many centuries before the theatre could recover its lost status, but during this period the old Greek and Latin stories were kept alive by wandering players and minstrels.

The plotting slave, a marble statuette of the Roman comic theatre (Istanbul Museum